services, Congress authorized the Commission to specify a separate definition of universal service that would apply only to public institutional telecommunications users.[2077] In formulating such a definition, Congress stated that "the conferees expect the Commission and the Joint Board to take into account the particular needs of hospitals, K-12 schools and libraries."[2078]

636. In addition to core services,[2079] the NPRM proposed to "designate additional services" for support to "rural health service providers" to the extent "necessary for the provision of [rural] health care services" pursuant to sections 254(c)(3) and 254(h)(1)(A).[2080] The NPRM sought comment on what telecommunications services were "necessary for the provision of [rural] health care services,"[2081] and whether incoming services should be eligible for support as well as outgoing services.[2082] The Commission also sought comment on the nature of the "'instruction relating to such [health care] services telecom carriers provide their subscribers."[2083]

2. Comments

637. Limit Services Eligible for Support. Some commenters, including NCTA, TCI, and Florida Cable, suggest limiting universal service support for health care providers to "core" services proposed under section 254(c)(1).[2084] Florida Cable argues that no services beyond core services should be supported before a "needs assessment" is accomplished.[2085]

[2077] Joint Explanatory Statement at 133. The term "institutional telecommunications user" is defined as including "an elementary and secondary school [or] a library . . . as those terms are defined in this paragraph." 47 U.S.C. § 254(h)(5)(c).

[2078] *Id.*

[2079] The NPRM sought comment on a list of potential "core" telecommunications services that might be supported under the provisions of section 254(c)(1), including: (1) voice grade access to the public switched network, with the ability to place and receive calls; (2) touch-tone; (3) single-party service; (4) access to emergency services (911); and (5) access to operator services; NPRM at para. 16. For a full discussion of section 254(c)(1) and core services, see section IV.B., *supra.*

[2080] NPRM at para. 90.

[2081] NPRM at para. 90.

[2082] NPRM at para. 94.

[2083] NPRM at para. 93.

[2084] *See, e.g.,* Florida Cable comments at 16; NCTA comments at 20; TCI comments at 24.

[2085] Florida Cable comments at 16.

These commenters argue that this option is most easily administered and would be the least expensive to support. TCI argues that the term "necessary" services should be defined narrowly "so that carriers are obligated to provide the least number of services" in order that these requirements do not "result in the creation of entry barriers."[2086] Frontier maintains that more advanced services like ATM and ISDN could be added when a compelling need is demonstrated.[2087]

638. Similarly, Ameritech argues that, under section 254(h)(1)(A), the services and functionalities eligible for support do not include all available services, but only those telecommunications services that are "necessary for the provision of health care services in a state, including instruction relating to such services."[2088] Several commenters assert that only certain limited services for health care providers should be supported under the provisions of section 254.[2089]

639. Expand Coverage to Additional Services. Several other commenters are of the view that, in addition to core services, "special" or "additional" services should be provided to rural health care providers at rates comparable to urban rates. MCI, for example, notes that adequate telecommunications services for these institutional users are likely to require greater bandwidth than that required by residential users.[2090] Some commenters asserting similar views state their preferences in terms of modes of transmission such as ATM,[2091] or basic rate or primary rate ISDN.[2092] Some use descriptions of digital transmission speed (e.g., up to and including 64 kbps,[2093] 112 kbps,[2094] 384 kbps[2095] or 1.544 Mbps[2096]). Still others use practical

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[2086] TCI comments at 24.

[2087] Frontier comments at 5.

[2088] Ameritech further comments at 12.

[2089] *See, e.g.*, Alaska Tel. further comments at 6 ("discounts should only apply to regulated services and functionalities"); NCTA further comments at 3; Nat'l Ass'n of Mfrs further comments at 1-2 (keep universal service supported services "as basic as possible"); Teleport further comments at 4-5.

[2090] MCI comments at 20.

[2091] *See, e.g.*, Frontier comments at 5; Mountaineer Doctor TV comments at 2; North Dakota PSC comments at 1.

[2092] Merit comments at 2; Mountaineer Doctor TV comments at 2; North Dakota PSC comments at 1; Nurse Practitioners comments at 3; PacTel comments at 9.

[2093] Alaska Health comments at 3.

[2094] American Telemedicine comments at 5.

terminology to describe the services they wish to have supported (e.g., "[s]end and receive diagnostic quality radiologic images").[2097] The Advisory Committee on Telecommunications and Health Care (Advisory Committee)[2098] argues that services necessary to support rural telemedicine efforts should include health care provider consultation, health care provider to patient consultation, continuing medical education programs for rural physicians and other health care providers, access to the most current medical information through the Internet for rural health care providers, round-the-clock support from physicians and specialists at urban centers, and specialty services such as radiology, dermatology, selected cardiology, pathology, obstetrics (fetal monitoring), pediatric, and psychiatric services.[2099] The Advisory Committee contends that these services should be supported by the capacity to transmit high speed data and high quality images to urban medical centers.[2100]

640. U S West and Alaska Health state that transmission speeds for telecommunications access lines qualifying as "additional services" that are "necessary for the provision of health care" could be limited to 64 kbps.[2101] Some commenters maintain that ISDN is the minimum service required to address current needs of rural health care.[2102] Others argue that transmission speeds up to and including 1.544 Mbps capacity or those supported by a T-1 line, are the minimum needed to support the telemedicine needs of rural health care providers adequately today.[2103]

[2095] Nebraska Hospitals comments at 1 ("At a very minimum, telemedicine requires 384 Kbps.").

[2096] Mountaineer Doctor TV comments at 2; Advisory Committee Report (*see infra*) at 4.

[2097] Nurse Practitioners comments at 2.

[2098] The Advisory Committee on Telecommunications and Health Care was established on June 12, 1996 by the Federal Communications Commission to provide advice to the Commission and the Joint Board on telemedicine, particularly the rural telemedicine provisions of the Telecommunications Act of 1996. The Advisory Committee, which was made up of thirty eight individuals with expertise and experience in the fields of health care, telecommunications and telemedicine, issued its report (Advisory Committee Report) on October 15, 1996.

[2099] Advisory Committee Report at 6-7.

[2100] Id.

[2101] Alaska Health comments at 3; U S West comments at 22.

[2102] Maryland Nurses comments at 2; North Dakota Health comments at 1; PacTel comments at 9 ("ISDN can support voice, video and data applications necessary in the health care field").

[2103] *See, e.g.,* BellSouth comments at 23; Maryland Nurses comments at 2; Merit comments at 3-5 (urging the Joint Board and the Commission to include the widest possible range of services in the additional services to be made available to health care providers including dedicated T-1 access for 1.544 Mbps service, ISDN primary

641. Four commenters suggest extending universal service support for health care providers to cover services or facilities supporting higher transmission capacities than 1.544 Mbps. Harris suggests that DS-3 service (up to 44.7 Mbps, the equivalent of a T-3 line) be provided to rural areas from nearby cities or towns to serve health care providers, schools and libraries in a state telecommunications network.[2104] Arizona Health suggests T-3 connections between universities and remote areas to "actualize" distance medical teaching and learning opportunities.[2105] AHA urges the Commission to view the needs of rural health care to encompass "the entire spectrum of modes of telecommunications."[2106] Western Alliance would limit support to only "the more expensive services -- full motion video, data switching (frame relay or ATM) and higher bandwidth lease lines such as DS-3.[2107]

642. Additional Services at Different Levels of Support. ORHP/HHS, seeking to balance "the need to develop an advanced telecommunications infrastructure with the need to avoid placing an undue financial burden on the universal service fund"[2108] suggests a two-tiered system of support. Under this system, rural hospitals would receive support for T-1 service providing transmission speeds up to and including 1.544 Mbps. Primary care providers, such as community and migrant health centers or rural health clinics, would be limited to support for basic rate ISDN or similar technology with transmission capacity of up to 64 to 128 kbps "with the ability to increase capacity to 384 kbps on an emergency basis."[2109] ORHP/HHS also maintains that in its experience, public switched networks "currently do not support T-1 bandwidth," and for that reason, rural health care providers that desire telecommunications services using this capacity will typically require dedicated T-1 lines connecting their facility to other rural and urban health care facilities.[2110]

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rate service and LAN access); Mountaineer Doctor TV comments at 2; Navajo Nation comments at 3; New Jersey Advocate comments at 21; RUS comments at 12-13 (noting that a "substantial majority" of applicants to their Telemedicine Grant Program request "Real-time full motion video access to multiple major urban medical centers"); BellSouth further comments at 10 ("services and functionalities which must be made available to rural health care providers at rates reasonably comparable to urban rates should be data, video and imaging at speeds of up to 1.544 Mbps for telemedicine purposes.").

[2104] Harris comments at 16.

[2105] Arizona Health comments at 2.

[2106] AHA comments at 6.

[2107] Western Alliance further comments at 2-3.

[2108] ORHP/HHS comments at 8.

[2109] ORHP/HHS comments at 8-9.

[2110] ORHP/HHS comments at 10.

643. Other commenters want no additional services designated at this time. Citizens Utilities, for example, suggests that it is unwise to identify any specific additional services other than "core" services for universal service support.[2111] Citizens Utilities notes that the language in section 254(c)(3) giving the Commission authority to designate additional services for universal service support for health care providers is permissive ("may designate"), not mandatory.[2112] Citizens Utilities would discourage attempts to "anticipate every type of service that every qualifying rural health care provider might conceivably require," because the list will invariably miss some needed services or "fail to anticipate services that are not yet deployed." Citizens Utilities suggests, instead, that parties be allowed to "negotiate technical arrangements."[2113] Likewise, Teleport argues that the Commission should postpone designating any additional services for support to a future "Phase II" proceeding that would allow the states first to develop specific proposals.[2114] Sprint suggests that until the market determines, through subscribership, what services are desirable and necessary, regulators should identify no specific services as requiring support.[2115]

644. Support Services that are Technology Neutral. Another group of commenters approves of setting levels of support based on baseline parameters like bandwidth or transmission rate, but urge the Commission to avoid mandating particular services or modes of service delivery in ways that would limit customer choice, risk "locking in" obsolete technologies, or hamper the most efficient results by unwisely favoring some technologies over others.[2116] For example, NCTA argues that "if and when additional services are designated for support, any proposed services should be competitively and technologically neutral . . . and potentially obsolete technologies such as ISDN should not be mandated."[2117]

645. Other commenters urge the Commission not to specify particular services in a

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[2111] *See* Citizens Utilities comments at 18.

[2112] Citizens Utilities comments at 18.

[2113] Citizens Utilities comments at 18 ("Limiting discounts to a specific technology and or bandwidth may limit choices on types of services available"). *See also* Mountaineer Doctor TV comments at 2.

[2114] Teleport comments at 19.

[2115] Sprint comments at 23.

[2116] *See, e.g.,* American Telemedicine comments at 3; Council on Competitiveness comments at 4; Idaho PUC comments at 10; NCTA comments at 17; U S West comments at 22.

[2117] NCTA comments at 20 (i.e., if broadband services with a certain bandwidth are required, providers should have the option to provide the service through various architectures. . .").

way that might limit health care providers' technology choices now or in the future.[2118] For example, AT&T argues that "the discount for qualified . . . health care providers should apply to telecommunications services of the qualified institution's choice."[2119] AT&T maintains that, because marketplace forces rather than the Commission should determine the evolution of telecommunications services, non-profit health care providers should be able to select the services that meet their needs."[2120]

646. Support Originating and Terminating Services. American Telemedicine asserts that because a telemedicine communication link may originate from either end of the transmission, both originating and terminating calls must be eligible for support.[2121] On the other hand, Ameritech argues that only originating services should be eligible for universal service support because of the extreme difficulty in determining the urban/rural price differential with respect to terminating services and also the difficulty of policing the use of terminating services.[2122] AHA maintains that because cellular services may charge for both incoming and outgoing calls, support should be provided for cellular services in both incoming and outgoing modes.[2123]

647. Support Telecommunications Services Only. Frontier asserts that the use of the term "telecommunications services" in sections 254(c)(1) and (h)(1)(A) makes it clear that in the case of health care providers, "access to the Nation's telecommunications infrastructure" is eligible for universal service support, while "the *means* to take advantage of that access (e.g., computers)" is not.[2124] BellSouth also argues that non-telecommunications services are excluded. It urges the Commission to clarify that non-"telecommunications services" are not

[2118] *See, e.g.*, American Telemedicine comments at 3; North Dakota PSC comments at 1.

[2119] AT&T further comments at 9.

[2120] AT&T further comments at 9. *See also* Benton further comments at 3 ("allow the greatest range of choice to the public institution."); ITC further comments at 4; MAP further comments at 3 ("apply to all commercially available services."); Maine PUC further comments at 6 ("apply to all available services.").

[2121] American Telemedicine comments at 5. *See also* Mountaineer Doctor TV comments at 3; Nebraska Hospitals comments at 2; North Dakota Health comments at 2.

[2122] Ameritech comments at 18-19.

[2123] AHA comments at 6.

[2124] Frontier comments at 4-5.

eligible for universal service support mechanisms.[2125]

648. "Instruction Relating to Such Services." Few commenters respond to the Commission's request for comment on the nature of the "instruction relating to such [health care] services"[2126] in section 254(h)(1)(A). Arizona Health comments that telemedicine (supported by T-3 cable to remote areas) would allow medical, pharmacy and nursing students to avoid much travel to meet both rural clinic assignments and class requirements, which would enable more students to rotate to rural assignments and allow teachers to better supervise the students while on their assignments.[2127]

649. Periodic Review. Numerous commenters strongly suggest that, since the technologies and the patterns and penetration of their usage are changing so rapidly, the definition of services or functionalities eligible for universal service support should be subject to ongoing or periodic Commission review.[2128] ORHP/HHS suggests revisiting the universal service definition on a periodic basis such as every three to five years.[2129] American Telemedicine maintains that rapid changes in telemedicine suggest the wisdom of both periodic review and redirection of established policy.[2130] Missouri PSC comments that "[t]he FCC should periodically re-evaluate this list [of services] to determine whether some other services have become more valuable, or whether some subsidized services have become obsolete."[2131] The Advisory Committee argues that the "market basket," a representative package of telemedicine services developed and suggested by the Advisory Committee, should be reviewed and updated at least every two years. It also recommends a survey of well-

[2125] BellSouth further comments at 10. *See also* Taconic Tel. Corp. reply comments at 6; Citizens Utilities further comments at 6 (1996 Act does not include customer premises equipment, inside wire or other internal connections.); PacTel further comments at 14-15.

[2126] NPRM at para. 93.

[2127] U of A, Health Sciences Center comments at 2.

[2128] *See, e.g.*, Council on Competitiveness comments at 4; (stating that "[p]olicymakers should periodically review and reconsider which additional service should be designated for universal service support for rural health care providers.").

[2129] ORHP/HHS comments at 11.

[2130] American Telemedicine comments at 4.

[2131] Missouri PSC comments at 14.

served areas to gather the information needed to revise accurately the "market basket."[2132]

3. Discussion

650. In attempting to determine what services should be designated as "necessary for the provision of health care services" and thus eligible for universal service support, we have carefully reviewed the record, considering the particular needs of hospitals and other health care providers that serve rural areas.[2133] We have been mindful of Congress's intent that universal service support mechanisms be used to ensure that residents of rural America are not denied, because of the unavailability or higher cost of telecommunications services, access to health care services that are more readily available to their fellow citizens residing in urban areas.[2134]

651. In this regard, we have found the Advisory Committee Report particularly helpful. The Advisory Committee developed what it calls a "market basket" of telemedicine services available in urban areas to serve as a guide to what level of such services would be necessary to support rural telemedicine.[2135] The Advisory Committee's market basket of needed services included the capacity to support provider-to-provider and provider-to-patient consultations, employing either voice or video transmission, between rural offices and urban centers. It included the capability to transmit data and medical images at speeds high enough to make transmission time reasonable and at transmission capacities broad enough to transmit accurately high-resolution radiological images and make use of examination devices such as electronic stethoscopes.[2136] Transmission of a single study of chest x-rays containing four film images would take 3.5 hours to transmit over a 28.8 Kbps modem, 40 minutes over an ISDN line and only 4 minutes over a T-1 line at 1.544 Mbps.[2137] Although the use of constantly improving compression technology would reduce these transmission times to some degree, we note that data compression of medical and radiological images under current technology results in some loss of image resolution and, as a result, some standard-setting bodies have

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[2132] Advisory Committee Report at 6 (noting that the Advisory Committee developed a "market basket" of telemedicine services as a guide to estimate what level of telecommunications services would be necessary to support rural telemedicine efforts).

[2133] *See* Joint Explanatory Statement at 132.

[2134] *See id.*

[2135] Advisory Committee Report at 6-7.

[2136] *Id. See also* American Telemedicine comments at 6-7.

[2137] ORHP/HHS comments at 9.

refused to approve the use of compression technology in teleradiology.[2138]

652. The Advisory Committee, and the majority of commenters who recommended a specific level of telecommunications bandwidth capacity to support rural health care providers, concluded that, to ensure access to the appropriate level of these services, health care professionals should be able to choose among any telecommunications services supporting a capacity of up to and including 1.544 Mbps or its equivalent.[2139] The Advisory Committee recognized that the need for various applications would differ among eligible health care providers. They also noted that, because rural health care providers would be required to commit substantial resources to the acquisition and maintenance of these services, health care providers would have a powerful incentive to choose the most cost-effective telecommunications services that would meet their telemedicine needs.

653. We note that, although one commenter asserts that lower bandwidth services such as ISDN might be a less expensive alternative sufficient for telemedicine needs,[2140] most other commenters suggesting ISDN couch their recommendation in terms of "at least"[2141] or "at a minimum"[2142] thus indicating that higher bandwidth would be desirable. We would, however, be hesitant to limit universal service support to a specific technology that may fall behind other emerging technologies or may not be the best telecommunications choice for certain health care providers.[2143] In addition, further detailed information about the relative costs of supporting higher bandwidth technologies and services would be helpful in making a recommendation that is both sufficient for the needs of health care providers and minimally burdensome on customers and carriers.

[2138] ORHP/HHS comments at 9-10.

[2139] Advisory Committee Report at 4. *See also* BellSouth comments at 23; Maryland Nurses comments at 2; Merit comments at 3-5 (urging the Joint Board and the Commission to include the widest possible range of services in the additional services to be made available to health care providers including dedicated T-1 access for 1.544 Mbps service, ISDN primary rate service and LAN access); Mountaineer Doctor TV comments at 2; Navajo Nation comments at 3; New Jersey Advocate comments at 21; RUS comments at 12-13 (noting that a "substantial majority" of applicants to their Telemedicine Grant Program request "Real-time full motion video access to multiple major urban medical centers"); BellSouth further comments at 10 ("services and functionalities which must be made available to rural health care providers at rates reasonably comparable to urban rates should be data, video and imaging at speeds of up to 1.544 Mbps for telemedicine purposes.").

[2140] PacTel comments at 9.

[2141] American Telemedicine comments at 7.

[2142] PacTel comments at 9.

[2143] *See* NCTA comments at 20.

654. Overall, we find the conclusions of the expert Advisory Committee and the other commenters persuasive in these matters and we believe that health care providers should be able to choose the telecommunications services they require. To the extent that these health care providers will be receiving federal universal service support, we also believe, consistent with the statute, that the support should be tied to those services "necessary for the provision of health care in a state."[2144] We note that few commenters addressed this important issue and the record contains no real examination of the impact on rural health care of limiting support to a specific level of transmission capacity. In addition, it is clear that both the technology in this area and its deployment in the marketplace is developing and progressing at a rapid pace. We find that additional information is needed to assist the Commission in formulating a standard that would be both cost-efficient and sufficient to meet the needs of rural health care providers. For these reasons, we recommend that the Commission solicit information and expert assessments of the exact scope of services that should be included in the list of those additional services "necessary for the provision of health care in a state."[2145] We recommend that the Commission seek information on the telecommunications needs of rural health care providers and on the most cost effective ways to provide these services to rural America. Finally, we recommend that the Commission take this information and these assessments into account in deciding what services to include as services eligible for universal service support.

655. As several commenters noted, a question is presented whether support should be offered to terminating services as well as originating services.[2146] We recommend that the Commission include terminating as well as originating services for universal service support in cases where the eligible health care provider would pay for terminating as well as originating services, such as in the case of cellular air time charges.[2147] We agree with those parties who assert that terminating services that are not billed to the rural health care provider would be too difficult to monitor and should not be supported.[2148]

656. Further, we recommend that the Commission initially designate only telecommunications services as eligible for support as expressly provided under the terms of sections 254(c)(1) and 254(h)(1)(A). We do not, at this time, recommend that the

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[2144] *See* 47 U.S.C. § 254(h)(1)(A).

[2145] 47 U.S.C. 254(h)(1)(A).

[2146] *See supra* section XI.B.2 (discussing comments of American Telemedicine, Ameritech and AHA).

[2147] *See,* AHA comments at 6.

[2148] *See,* Ameritech comments at 18-19.

Commission find that customer premises equipment would be eligible for support.[2149]

657. After the Commission designates those services eligible for support for rural health care providers, we recommend that the Commission's list of supported telecommunications services be revisited in 2001, when the Commission is scheduled to reconvene a Joint Board on universal service. We agree with those commenters that argue that the rapid pace and vast scope of change in telecommunications technologies, infrastructures and businesses suggest the wisdom of periodically reviewing the list and definition of services designated for support in order to make needed modifications in the policy.[2150]

C. Implementing Support Mechanisms for Comparable Rates.

1. Determining the urban rate.

a. Background

658. The rate to be charged for telecommunications services to eligible health care providers who serve rural areas is described in section 254(h)(1)(A) as follows:

> (A) HEALTH CARE PROVIDERS FOR RURAL AREAS. - A telecommunications carrier shall . . . provide telecommunications services . . . to any public or non-profit health care provider . . . at rates that are reasonably comparable to rates charged for similar services in urban areas in that state.[2151]

659. In the Joint Explanatory Statement, Congress stated that subsection 254(h) was "intended to insure that health care providers for rural areas . . . have affordable access to modern telecommunications services that will enable them to provide medical and educational services to all parts of the nation."[2152] Congress emphasized affordability of telemedicine as a goal of this subsection, stating: "[i]t is intended that the rural health care provider receive an affordable rate for the services necessary for the purposes of telemedicine and instruction

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[2149] *See, e.g.*, BellSouth further comments at 10; Citizens Utilities further comments at 6.

[2150] American Telemedicine comments at 4; Council on Competitiveness comments at 4-5; Missouri PSC comments at 14; ORHP comments at 11.

[2151] 47 U.S.C. § 254(h)(1)(A).

[2152] Jt. Statement of Managers, S. Conf. Rep. No. 104-230, 104th Cong., 2d Sess. 132 (1996).

relating to such services."[2153]

660. In the NPRM, the Commission stated that "in establishing an appropriate methodology for ensuring 'reasonably comparable' rates, we wish to minimize, to the extent consistent with section 254, the administrative burden on regulators and carriers."[2154] The Commission stated that it sought a methodology for establishing "reasonably comparable" rates that was based on publicly available data, neither under-inclusive nor over-inclusive, and easily administered.[2155] It asked commenters to discuss any proposed methodologies in these terms.[2156] The Commission also stated that it interpreted the term "reasonably comparable" to require less than absolute precision in determining the appropriate rates for rural health care providers.[2157] It asked for comments on how carriers should derive the rates applicable to rural health care providers to ensure the services to which they subscribed would be priced at reasonably comparable rates. In addition, the Commission asked whether average rates should be computed or whether some other method would be more appropriate.[2158]

b. Comments

661. Average Rate. Several commenters advocate using an average rate for telecommunications services to meet the statutory definition for a rate "reasonably comparable" to rates charged for similar services in urban areas in that state.[2159] USTA proposes using the statewide average rate for the particular service requested.[2160] USTA argues that setting the rate at the statewide average would meet the requirement to offer rates that are reasonably comparable because it would be based upon the statewide average in both rural and urban areas.[2161] Bell Atlantic asserts that the rate charged urban health care providers should not exceed a statewide average rate for telecommunications services used in

[2153] Joint Explanatory Statement at 131 (1996).

[2154] NPRM at para. 100.

[2155] NPRM at para. 95.

[2156] NPRM at para. 98.

[2157] NPRM at para. 100.

[2158] NPRM at para. 101.

[2159] *See, e.g.*, Sprint comments at 23; USTA comments at 11; Bell Atlantic further comments at 3.

[2160] USTA comments at 11.

[2161] USTA comments at 11; USTA reply comments at 7.

the provision of health care service.[2162] North Dakota Health recommends the use of a mean state urban rate plus or minus 10 percent as a reasonably comparable rate for this purpose.[2163] Sprint argues that the rate should be determined by taking averages of tariffed services on a nationwide basis.[2164]

662. Eliminate Distance-Based Charges. Several commenters argue that limiting or eliminating distance-based charges and charges based on transmission across LATA boundaries, which are often attached to telecommunications rates in rural areas, would help make a rural rate "reasonably comparable" to an urban rate.[2165] Mountaineer Doctor TV suggests eliminating LATA boundaries for health care and educational usage because this will allow one carrier to serve the circuit from end to end.[2166] Mountaineer Doctor TV also recommends the use of a recurring flat fee for both ends of the circuit, and a discounted-mileage charge for health care and educational usage.[2167] Mountaineer Doctor TV asserts that eliminating LATA boundaries would result in an immediate cost savings while improving access and distribution of health care related services in rural areas.[2168] Likewise, Montana Tel. Ass'n. argues that mileage charges for high-speed data or broadband services should be prohibited.[2169]

663. Toll-Free Internet Access. Several commenters argue that toll-free dial-up Internet access should be supported for rural health care providers.[2170] ORHP/HHS describes toll-free dial-up Internet access as "an essential prerequisite to providing advanced telecommunications services to health care providers" that should be made available to all

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[2162] Bell Atlantic further comments at 3.

[2163] North Dakota Health comments at 2.

[2164] Sprint comments at 23 ("The discount should be the difference between the nationwide average tariffed rate for services provided in urban markets and the nationwide average tariffed rate for similar services provided in rural markets.").

[2165] *See, e.g.*, American Telemedicine comments at 9; Mountaineer Doctor TV comments at 3; Advisory Committee Report at 11.

[2166] *See, e.g.*, Mountaineer Doctor TV comments at 3.

[2167] Mountaineer Doctor TV comments at 3.

[2168] Mountaineer Doctor TV comments at 3.

[2169] Montana Tel. Ass'n comments at 7.

[2170] *See, e.g.*, Idaho PUC comments at 11; Maryland Nurses comments at 2; RUS comments at 13; Advisory Committee at 4.

rural customers.[2171] U S West supports inclusion of toll-free Internet access for universal service support and suggests that carriers should be able to choose among a variety of means to carry Internet toll traffic, including, for example, an 800 or FX service.[2172] The Governor of Guam states that core services for telemedicine should include high-speed digital and Internet access.[2173] RUS maintains that "rural use of Internet and other information services may never approach urban and suburban levels of use until availability of access on a non-toll basis is provided."[2174]

664. Relate Comparability to the Closest Urban Area. Ameritech argues that the rate for a rural health care provider should be based on the rate charged for a comparable service in the closest urban area.[2175] NCTA also asserts that the methodology for determining reasonably comparable urban rates should not be based on any kind of average of urban rates, but rather on a comparison of rates in the nearest urban area, or perhaps two urban areas.[2176]

665. Competitive Bidding. Florida Cable asserts that a competitive bid process could achieve rates for rural health care providers that are reasonably comparable to rates charged by the same or other carriers serving health care providers in the nearby rural area(s).[2177] Florida Cable outlines a bidding process under which comparability to the urban rate would be one bid specification and every bid would be compared to publicly available tariff information about urban rates. The lowest bid, no higher than 10 percent over urban rates, would receive the contract.[2178] Florida Cable proposes that, in the absence of a bidder, the states would most likely be best able to determine at what level services should be discounted and what eligible universal service provider(s) in a geographic area would meet an eligible facility's needs.[2179]

666. Other Suggestions. Alliance for Distance Education asserts that the rate for

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[2171] ORHP/HHS comments at 7.

[2172] U S West comments at 23.

[2173] Governor of Guam reply comments at 3.

[2174] RUS comments at 11.

[2175] Ameritech comments at 19.

[2176] NCTA comments at 21.

[2177] Florida Cable comments at 17.

[2178] Florida Cable comments at 17, 18.

[2179] Florida Cable comments at 18.

health care providers should equal the lower of the lowest Lifeline customer's rate or the lowest contract rate paid by corporations or institutions in the state for the telecommunications service the health care provider requests.[2180] NECA also argues that an approach similar to the rules governing the calculation of Lifeline assistance revenue could be followed with respect to health care providers.[2181] Wyoming PSC asserts that in defining reasonably comparable rates, the state public service commissions should be consulted.[2182] Mountaineer Doctor TV questions the basic structure of the statute and its ability to address this problem. Noting that many of the rural areas' connectivity stems from urban centers, it asks whether urban pricing structures really differ that dramatically from such structures for their rural counterparts, or whether the price difference reflects shorter mileage charges and lack of crossed LATA boundaries.[2183]

c. Discussion

667. We recommend that, for each telecommunications service delivered to a qualified health care provider as provided in section 254(h)(1)(A), the Commission should designate as the rate "reasonably comparable to rates charged for similar services in urban areas in that state" (the "urban rate"), the highest tariffed or publicly available rate actually being charged to commercial customers within the jurisdictional boundary of the nearest large city in the state (measured by airline miles from the health care provider's location to the closest city boundary point).[2184]

668. We agree with the parties who suggest that the urban/rural rate differential should be based on the rates charged for similar services in the urban area closest to the health care provider's location.[2185] We believe that relating the provider's rate to a specific, publicly available rate actually being charged within the political boundary of a city has many advantages over other plans proposed. This method is easy to understand and use[2186] and thus

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[2180] Alliance for Distance Education comments at 1.

[2181] NECA comments at 15.

[2182] Wyoming PSC comments at 12.

[2183] Mountaineer Doctor TV comments at 4.

[2184] We do not recommend an exact definition of the size of population a city must have to qualify as "large" for purposes of calculating the urban rate. We leave that determination to the Commission. *See infra* section XI.D.1.c. for a discussion on defining urban areas.

[2185] Ameritech comments at 19; NCTA comments at 21.

[2186] It should be relatively easy to compare a city's political boundaries with a carrier's rate maps and thus ascertain precisely the applicable rate.

complies with the Commission's guideline that implementation of universal service support mechanisms should be fashioned to minimize administrative burdens on regulators and carriers.[2187] For example, because it involves a one-step process, this method would be less administratively burdensome than a competitive bidding system[2188] or a process based on the current Lifeline assistance program.[2189] We also believe it preferable to plans that would require obtaining information about private contract rates, which are proprietary and not obtainable without elaborate confidentiality safeguards.[2190]

669. Several commenting parties and the Advisory Committee request that access to an (ISP) be made available to rural health care providers toll-free or at toll rates comparable to what most urban telecommunications customers are paying.[2191] We note that the Internet can supply access to many important sources of information for rural health care providers and might also be a more flexible and cost effective alternative to dedicated circuits as a conferencing tool. We also note, however, that the record is completely lacking of information on the extent and pace of development of Internet Service Provider coverage in rural areas in the country, and somewhat lacking in information on the cost of supporting the toll portion of Internet access for rural health care providers. Given the information currently on the record in this proceeding, we are not prepared to recommend supporting this service at this time. We do recommend, however, that the Commission seek information on the rate of expansion of local access coverage of ISPs in rural areas of the country and the costs likely to be incurred in providing toll-free access to ISPs for health care providers in rural areas. We also recommend that the Commission take this information and these assessments into account in deciding what services to include as services eligible for universal service support.

670. Although none of the commenting parties provides detailed suggestions regarding how best to define the applicable urban area, we believe there are good reasons that support the definition we recommend. Using the political boundaries of cities makes this plan specific and predictable.[2192] Using the nearest large city to the health care provider as a reference point for urban rates is logical and efficient because that is the location from which telecommunications services to a given rural area are most likely to originate and be

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[2187] NPRM at para. 100.

[2188] *See* Florida Cable comments at 17-18.

[2189] *See* NECA comments at 15.

[2190] *See* Alliance for Distance Education comments at 15.

[2191] *See* Idaho PUC comments at 11; Maryland Nurses comments at 2; ORHP/HHS comments at 7; RUS comments at 13.

[2192] *See* 47 U.S.C. § 254(b)(5).

maintained, thus providing more accurate and more realistic comparable rates for specific services than using rates, or average rates, from more distant urban areas.[2193]

671. While acknowledging that other definitions are possible, we conclude that "comparable" in this context is most reasonably defined to mean "no higher than the highest" rate charged in the nearest city (excluding distance-based charges). We reject commenters' suggestions of using average rates, because an average rate, even if drawn from the city nearest to the health care provider, would entitle some rural customers to rates below those paid by some urban customers, creating fairness problems for those urban customers and arguably going farther with this mechanism than Congress intended. Using an average of statewide urban rates,[2194] an average statewide rate,[2195] or an average nationwide rate[2196] would force the choice of a rate even farther removed from the nearest urban area from which service is likely to originate, and therefore potentially much higher or much lower than rates in nearby urban areas. Rates of these potentially varying magnitudes risk even greater fairness problems. Further, the use of an average nationwide rate would thwart the purpose of section 254(h)(1)(A) by requiring rates in some states that are not reasonably comparable to any rates in the urban areas of that state.

672. Several commenters and the Advisory Committee request that we address the issue of distance-based charges and charges for crossing LATA boundaries.[2197] We conclude that where such charges are in excess of those charges incurred by commercial customers in the nearest urban area, the statute suggests strongly that such charges should be made comparable. Indeed, it seems that the whole thrust of section 254(h)(1)(A) is that such disparities in telecommunications rates based on distance should be reduced or eliminated by universal service support. We decline, however, to recommend that the Commission eliminate or reduce such charges at this time because we find that the record lacks sufficient evidence about the costs of excluding distance-based charges in establishing the comparable rate. Instead, we encourage the Commission to solicit additional information on the probable costs that would be incurred in supporting distance-based and LATA crossing charges for rural health care providers where such charges are in excess of those paid by customers in the nearest urban areas of the state. We further recommend that the Commission take this information and these assessments into account in deciding whether to include these charges

[2193] *See infra* section XI.C.2. concerning the calculation of the offset or reimbursement due to the carrier.

[2194] North Dakota Health comments at 2.

[2195] Bell Atlantic further comments at 3.

[2196] Sprint comments at 23.

[2197] *See, e.g.,* American Telemedicine comments at 9; Mountaineer Doctor TV comments at 3; Advisory Committee Report at 11.

in the list of charges eligible for universal service support.

673. No commenting parties addressed the issue of whether insular areas experience a disparity in telecommunications rates between health care providers in urbanized and non-urbanized areas in their territories. We also lack sufficient information about the size of cities and other demographic information pertaining to insular areas that might be used to establish the urban rate or rural rates in each of those areas. We recommend that the Commission solicit further information on these topics and make appropriate provision in the final Order for equalizing any disparities between urban and rural telecommunications rates to health care providers in insular areas.

2. Calculating the rural rate.

a. Background

674. The method of determining the amount that a telecommunications carrier that has provided services to an eligible health care provider is entitled to treat as its universal service obligation is described in section 254(h)(1)(A) as follows:

> (A) HEALTH CARE PROVIDERS FOR RURAL AREAS. . . A telecommunications carrier providing service under this paragraph shall be entitled to have an amount equal to the difference, if any, between the rates for services provided to health care providers for rural areas in a State and the rates for *similar services provided to other customers in comparable rural areas in that State* treated as a service obligation as a part of its obligation to participate in the mechanisms to preserve and advance universal service.[2198]

675. The Commission stated in the NPRM that the amount of credit or reimbursement to carriers from health care support mechanisms should be based on the difference between the price actually charged to eligible health care providers and the rates for similar, if not identical, services provided to "other customers" in the rural areas of that state.[2199] The Commission requested comments on how to determine the rate for rural non-health care providers and the rate for urban health care providers necessary to calculate the amount of credit.[2200] The NPRM asked whether average rates should be computed or whether

[2198] 47 U.S.C. § 254(h)(1)(A) (emphasis added).

[2199] NPRM at para. 101.

[2200] NPRM at para. 101.

some other method might be more appropriate.[2201] The Commission also stated that it may be difficult for a carrier to establish rates for similar services if identical services are not provided in the state. It stated, however, that similar services will likely be generally available.[2202] The Commission sought comment on whether there is a need to define when services are comparable and, if so, how this might be done.[2203]

b. Comments

676. Few commenters address the issue of how to determine the rates needed to calculate the credit.[2204] Pacific Telecom asserts that the amount of the differential that qualifies for support treatment can readily be identified by comparing the rate at which the service is provided either with rates publicly filed or with rates that can be acquired by Commission order.[2205] Pacific Telecom further states that "[i]n either case, a specific support amount can be established and added to the USF pool requirement for recovery."[2206] Pacific Telecom also argues that the Commission could rely on the existing USF pooling mechanism immediately to begin support for rural educational and health care providers.[2207] The Advisory Committee contends that the Commission should arrange for studies to be periodically conducted to compare urban rates versus rural costs-plus-profit for those services in the minimum package (core services). It argues that these results should be used as the basis for reimbursing the designated providers in rural areas for reduced prices for core services.[2208]

677. GCI asserts that the Commission should require carriers to file information with the Commission that sets out both services and rates charged to calculate the difference, if any, between the urban rate at which the service is provided and rates for similar services provided to customers in comparable rural areas in that state.[2209]

[2201] NPRM at para. 101.

[2202] NPRM at para. 102.

[2203] NPRM at para. 102.

[2204] NPRM at para. 101.

[2205] Pacific Telecom comments at 6 ("e.g., via TSLRIC study submitted by a competitive LEC").

[2206] Pacific Telecom comments at 6.

[2207] Pacific Telecom comments at 7.

[2208] Advisory Committee Report at 13.

[2209] GCI reply comments at 15

678. Comparable Services. Ameritech argues that there is no need for the Commission to prescribe guidelines for what constitutes "comparable" services between urban and rural areas. Instead the Commission should simply require the availability of comparable services at the rate charged in the urban area and resolve disputes informally if and when any arise.[2210]

c. Discussion

679. Although a few commenting parties responded to the request in the NPRM seeking comment on how to determine the "rate for non-health-care providers . . . necessary to calculate the amount of credit"[2211] (the "rural rate"), no commenter directly addressed the mechanics of how to calculate the credit. Therefore, we must fashion our own recommendation to the Commission for the design of this important piece of the support mechanism for health care providers for rural areas.

680. Mindful of the Commission's obligation to craft a mechanism that is "specific, predictable and sufficient,"[2212] we recommend that the rural rate be determined to be the average of the rates actually being charged to customers, other than health care providers, for identical or technically similar services provided by the carrier providing the service, to commercial customers in the rural county in which the health care provider is located. For all purposes associated with determining the rural rate, we recommend that the term "rural county" be defined as any "non-metro" county as defined by the OMB MSA list, along with the non-urban areas of those metro counties identified in the Goldsmith Modification used by the ORHP/HHS.[2213] We also recommend that the rates averaged to calculate the rural rate not include any rates reduced by universal service programs and paid by schools, libraries or rural health care providers.

681. We further recommend that, where the carrier is providing no identical or technically similar services in that rural county, the rural rate should be determined by taking the average of the tariffed and other publicly-available rates charged for the same or similar services in that rural county by other carriers. If no such services have been charged or are publicly available, or if the carrier deems the method described here, as it would be applied to the carrier, to be unfair for any reason, the carrier should be allowed, in the first instance, to submit for the state commission's approval, a cost-based rate for the provision of the service

[2210] Ameritech comments at 19.

[2211] NPRM at para. 101.

[2212] 47 U.S.C. § 254(b)(5).

[2213] For a discussion of OMB metro and non-metro areas, MSAs and the Goldsmith Modification, see ORHP/HHS comments at 5 and section XI.D.1.b., *infra*.

in the most economically efficient, reasonably available manner. Where state commission review is not available, the carrier should be allowed to submit the proposed rate to the Commission for its approval. The proposed rate should be supported, justified, reviewed and approved, in the initial submission and periodically thereafter, according to procedures and requirements similar to those used for establishing tariffed rates for telecommunications services in that state.

682. We conclude that, by defining "comparable rural areas" as the rural county in which the health care provider is located, the rates charged to non-health care customers in that area are likely to be a reasonable measure of "the rates charged for similar services provided to other customers in comparable rural areas in the state." In cases where there are no similar services being provided, either by the carrier or by others, and thus no comparable rates to average, or where the carrier concludes that rates derived from this formula are unfair, we find the availability of a cost-based rate application procedure becomes an important backstop. We intend that this procedure will ensure greater fairness to the carrier and further ensure that the support mechanism is more likely to be "sufficient" as required by section 254.[2214] We note, however, that the record is inadequate on this issue and, accordingly, we recommend that the Commission request additional information prior to adopting final rules, on the costs that would be incurred in supporting necessary upgrades to the public switched network. We also recommend that the Commission seek additional information as to what extent ongoing network modernization, as is currently going forward under private initiatives or according to state-sponsored modernization plans, might make universal service support of this element unnecessary. We further recommend that the Commission take this information into account in deciding whether to include network upgrades in the list of services eligible for universal service support.

683. We acknowledge a related issue that arises when the public switched network serving a rural health care provider is not sufficiently technologically advanced to support the services needed by that provider. The 1996 Act appears to intend that the service be delivered to the health care provider without regard to any inability on the part of the local network to handle the service. In that regard, the Advisory Committee notes the deficiencies in many parts of rural America of the telecommunications "backbone infrastructure" and recommends that the Commission authorize the use of universal service funds to upgrade this part of the network.[2215] We are reluctant to recommend such a course, however, without better information than is provided in the current record about the absolute and relative costs of providing such support. We have considered, for example, recommending that the carrier be permitted to include in its proposed rate the cost of upgrades to the public switched telephone network, amortized over the reasonable life of the upgraded facilities, where such upgrades could be shown to be necessary to deliver the service to the health care provider in

[2214] *See* 47 U.S.C. § 254(b)(5).

[2215] Advisory Committee Report at 8.

the most cost-effective manner. We have further considered recommending that the reviewing authority require the carrier, in setting the rate, to take into account the actual and reasonably anticipated usage of the upgraded facilities by other customers. Such an option might actually offer the potential of reducing the cost to the universal service fund of providing services to the health care provider. We are, however, without sufficient information in the record to reach this conclusion with confidence. Accordingly, we recommend that the Commission seek additional information on the probable costs and on the advantages and disadvantages of supporting upgrades to the public switched or backbone networks where such upgrades can be shown to be necessary to deliver services to eligible rural health care providers.

684. We believe that the above-described methods for calculating the rural rate compare favorably with the methods suggested by the sole party supplying comments on this question. Pacific Telecom suggests comparing the rate at which the service is provided with "rates publicly filed" or with rates obtained "by Commission order."[2216] We approve of using rates publicly filed or obtained in the ordinary course of Commission proceedings to determine the rural as well as the urban rate. We reject, however, any suggestion that rates not publicly available should be required to be disclosed simply in order to implement a universal service mechanism because we find this method to be excessively burdensome to carriers and regulators.

3. Selecting between combined or separate support mechanisms for health care providers and for schools and libraries.

a. Background

685. In the Public Notice, the Common Carrier Bureau asked whether separate funding mechanisms should be established for schools and libraries and for rural health care providers.[2217]

b. Comments

686. Separate Funding Mechanisms. Several commenters maintained that the funding mechanism for support to rural health care providers should be separate from the mechanism provided for schools and libraries[2218] Others argued that separate funding

[2216] Pacific Telecom comments at 6.

[2217] Public Notice at question 22.

[2218] RTC comments at 18-19 (a "separate or segregated fund" should be established for schools, libraries and health care providers so that "the very difficult job of determining proper funding levels can be established."). *See also* ALA further comments at 18; Alaska Tel. further comments at 7; ITC further comments at 10; Information Renaissance further comments at 10; Maryland DOE further comments at 4 (if block grants are

mechanisms are not necessary.[2219] Some commenters argued for a common funding mechanism but specified the addition of some form of separate accounting or distribution mechanism.[2220]

c. Discussion

687. We recommend that there be no separate funding mechanism for eligible health care providers and schools and libraries. We further recommend that separate accounting and allocation systems be maintained for the funds collected for the two groups. We agree with the parties arguing that separate funding mechanisms would be expensive and unnecessary but that separate accounting and allocation systems would be more efficient because the two groups have different requirements under the 1996 Act for calculating disbursements from the fund and the two systems could then more easily be monitored or amended on an individual basis.[2221]

D. Eligibility

1. Defining rural and urban areas.

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used); NCTA further comments at 6; NECA further comments at 13-14 (stating that the "[c]ommon fund collection mechanism should be used."); RTC further comments at 16; SWBT further comments at 18 (favoring separate mechanism, but stating that "costs should be reflected as a single surcharge on the customer bill."); U.S. Libraries further comments at 7; Vitelco further comments at 6; Western Alliance further comments at 4 (stating that "because schools and libraries are generally governmental entities, but rural health care is generally private sector.").

[2219] AT&T further comments at 17; Apple further comments at 4 (stating that mechanisms might "detract from the ability of these entities to share facilities or cooperate in network design and operation. . . "); California Library further comments at 5; EDLINC further comments at 40-41; GTE further comments at 25; MCI further comments at 10 (stating that "[i]f the FCC adopts an interstate-only USF, there must be separate funding mechanisms for schools and libraries and for rural health care providers because all telecom carriers must contribute to the latter and only interstate carriers would contribute to the former."); New York DOE further comments at 10; U.S. Distance Learning Ass'n further comments at 8.

[2220] AirTouch further comments at 19 ("would be helpful to maintain separate accounting for these programs should they need to be phased out on an individual basis."); BellSouth further comments at 30; Bell Atlantic further comments at 7; PacTel further comments at 27 (stating that it is "[i]ndifferent to whether education fund is funded separately, but collected funds should be divided into discreet buckets to facilitate separate allocation, tracking and accounting."); USTA further comments at 17; U S West further comments at 12 (stating that there should be "separate allocation and administration functions for health care providers, since they have separate requirements under the 1996 Act.").

[2221] *See, e.g.,* AirTouch further comments at 19; BellSouth further comments at 30; Bell Atlantic further comments at 7; PacTel further comments at 27; USTA further comments at 17; U S West further comments at 12.

a. Background

688. Section 254(h)(1)(A) provides that a telecommunications carrier shall provide services to any health care provider "that serves persons who reside in *rural areas* in that State."[2222] The section further provides that the rates charged for the services provided must be "reasonably comparable to rates charged in *urban areas* in that State."[2223] In addition, the section provides that the carrier providing the service is entitled to a credit in an amount equal to the difference between the rate charged and the rate in "comparable *rural areas* in that State."[2224]

689. In the NPRM, the Commission recognized that in order to implement section 254(h)(1)(A), it would be necessary to designate areas as either urban or rural in order to be able to determine the residency of health care patients served by providers and to establish reasonably comparable rates for telecommunications services that are necessary for the provision of health care services in a state.[2225] The Commission stated that it sought a methodology to accomplish this task that would be based on publicly available data, neither under-inclusive nor over-inclusive, and easily administered,[2226] and it asked commenters to discuss any proposed methodologies in these terms.[2227] The NPRM specifically described alternative methodologies developed by the ORHP/HHS and by the United States Department of Agriculture's Economic Research Service and asked for comment on these methods for defining rural areas in a state.[2228] The NPRM also asked commenters to address the costs and application of these proposals in regard to the requirements of the 1996 Act that universal service support mechanisms be "specific, predictable and sufficient."[2229]

b. Comments

690. ORHP/HHS Method and the Goldsmith Modification. The most comprehensive and detailed comments on methods for determining the boundaries of rural areas are provided by ORHP/HHS. It asserts that no method for defining "rural" is perfect; each method has

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[2222] 47 U.S.C. § 254(h)(1)(A) (emphasis added).

[2223] 47 U.S.C. § 254(h)(1)(A) (emphasis added).

[2224] 47 U.S.C. § 254(h)(1)(A) (emphasis added).

[2225] NPRM at para. 95.

[2226] NPRM at para. 95.

[2227] NPRM at para. 98.

[2228] NPRM at paras. 96-98.

[2229] NPRM at para. 98 (*citing* 47 U.S.C. § 254(b)(5)).

deficiencies or problems.[2230] For ease of administration, ORHP/HHS suggests using counties as the unit of analysis and specifically the Office of Management and Budget's (OMB) Metropolitan Statistical Area (MSA) metropolitan (metro) and non-metropolitan (non-metro) counties.[2231] Because of the methods that OMB uses to designate counties as metro, ORHP/HHS asserts that large, nominally metro counties, particularly in western states, can have huge rural areas, as for example when population is consolidated into one corner of the county. For that reason, ORHP/HHS suggests using the "Goldsmith Modification" of the OMB method.[2232] The Goldsmith Modification identifies densely-populated census tracts or blocks within large metro counties (covering at least 1250 square miles) thus allowing easy separation of these tracts and blocks from the rural tracts in the county.[2233] ORHP/HHS also suggests giving special consideration to "frontier" areas with extremely low density within rural areas.[2234]

691. Several commenters specifically approve of using the ORHP/HHS methodology for defining rural areas.[2235] North Dakota Health suggests using a method that does not rely on county boundaries alone for large counties with large disparities of density.[2236] Florida Cable states that the ORHP/HHS method "may be appropriate."[2237] American Telemedicine endorses the OMB county classification system without reference to the "Goldsmith Modification" recommended by ORHP/HHS.[2238]

[2230] ORHP/HHS comments at 5.

[2231] OMB defines Metropolitan Statistical Areas for use in federal statistical activities pursuant to 44 U.S.C. § 3504(d)(3) and 31 U.S.C. § 1104(d) and E.O. No. 10253 (June 11, 1951). Copies of the definitions used and the list of Metropolitan Areas is available to the public from the National Technical Information Service (NTIS) through the mail or over the Internet.

[2232] The Goldsmith Modification was developed by Harold F. Goldsmith, Ph.D., for the ORHP/HHS. The strategy for identifying the rural areas of large metropolitan counties is described in Goldsmith, H.F., Puskin, D.S. and Stiles, K.J., *Improving the Operational Definition of "Rural Areas" for Federal Programs*, Office of Rural Health Policy, 1993.

[2233] ORHP/HHS comments at 5-6.

[2234] ORHP/HHS comments at 5-6.

[2235] MCI comments at 21; NCTA comments at 20; RUS comments at 13.

[2236] North Dakota Health comments at 2 ("Caution against using county populations as a sole determinant as counties can vary significantly in size. . . ").

[2237] Florida Cable comments at 14; MCI comments at 21; RUS comments at 13.

[2238] American Telemedicine comments at 9.